

**COMMONWEALTH OF VIRGINIA  
Department of Environmental Quality  
Piedmont Regional Office**

**STATEMENT OF LEGAL AND FACTUAL BASIS  
DRAFT/PROPOSED**

Waste Management of Virginia, Inc.  
Charles City County Landfill  
8000 Chambers Road, Charles City County, Virginia  
Permit No. VA-51254

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Waste Management of Virginia, Inc. has applied for a Title V Operating Permit for its Charles City County Landfill facility. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

Engineer/Permit Contact: \_\_\_\_\_

Date: September 7,  
2006

Air Permit Manager: \_\_\_\_\_

Date: September 7, 2006

Regional Director: \_\_\_\_\_

Date: September 7, 2006

## **FACILITY INFORMATION**

### Permittee

Waste Management of Virginia, Inc.  
8000 Chambers Road  
Charles City County, Virginia 23230

### Facility

Charles City County Landfill  
8000 Chambers Road  
Charles City County, Virginia 23230

Facility ID No.: 51- 036-0014

## **SOURCE DESCRIPTION**

NAICS Code 562212 and SIC Code: 4953 - This facility consists of a municipal solid waste landfill that collects the landfill gas and burns it primarily in either an open flare or the gas is routed to a treatment system that processes the collected gas for subsequent sale or use to energy recovery device(s).

The facility is a Title V major source of non-methane organic carbons. This source is located in an attainment area for all pollutants except Ozone, and is not a PSD major source. The construction of the gas collection and control system was previously permitted under a Minor NSR Permit issued on February 10, 2003.

## **COMPLIANCE STATUS**

A full compliance evaluation of this facility, including a site visit, has been conducted. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility and DEQ entered into a Consent Order to resolve a Notice of Violation on November 22, 1999 alleging noncompliance with failing to meet certain requirements of NSPS Subpart WWW. This order was formally resolved on September 27, 2001 with civil charge received July 16, 2001.

The facility is inspected once per year. The facility was most recently inspected on August 10, 2006 and found to be in compliance.

## EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

The emissions units at this facility consist of the following :

Emission Unit ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device Description (PCD)	PCD ID	Stack ID	Pollutant Controlled	Applicable Permit Date
Landfill Operations							
	Municipal Solid Waste Landfill operating since 1990	45,207,848 yd <sup>3</sup> with a maximum compaction of 1,800 lbs/yd <sup>3</sup>	Enclosed flare rated at 4570 SCFM 1997 (to be removed)	D001	V001	NMOC 98% CE or 20 ppmv; VOC; HAPs	08/30/2006
			Open flare rated at 3600 SCFM 1994	D002	V002	NMOC designed and operated as in 40 CFR 60.18; VOC; HAPs	
			Three Open flares rated at 2500 SCFM 2005 (Phased)	D003 D004 D005	V003 V004 V005	NMOC designed and operated as in 40 CFR 60.18; VOC; HAPs	
			Two Open flares rated at 50 SCFM	D006 D007	V006 V007	Solar powered, odor Control state only.	
Storage Tanks							
PO8	Leachate above ground storage tank 1990	250,000 gallons	none	none	fugitive	N/A	n/a
PO9	Leachate above ground storage tank 1990	250,000 gallons	none	none	fugitive	N/A	n/a

\*The Size/Rated capacity is provided for informational purposes only, and is not an applicable requirement.

## EMISSIONS INVENTORY

A summary of the 2004 annual emissions are below:

### 2004 Actual Emissions

	2004 Criteria Pollutant Emission in Tons/Year					
Emissions	NMOC*	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	NO <sub>x</sub>
Total	7.03	23.41	8.6	0.54	10.89	16.80

\* Fugitive NMOC emissions are not in the NSR permit date August 30, 2006.

## EMISSION UNIT APPLICABLE REQUIREMENTS - Landfill, LFG Collection and Control System

### LIMITATIONS

Limits for the operation of the landfill are established in the August 30, 2006 source permit as follows:

- # 3. **Design Capacity** - The design capacity of the MSW landfill is 45,207,848 yd<sup>3</sup> with a maximum compaction of 1,800 lbs/yd<sup>3</sup>. A change in the design capacity may require a State Air Pollution Control Board permit to construct and operate.  
(9 VAC 5-50-390)
- # 4. **LFG Collection and Control System: Design and Operational Standards** The permittee shall operate a landfill gas (LFG) collection and control system that:
- Is designed to handle the maximum expected gas flow rate from the entire area of the landfill;
  - Collects gas from each area, cell or group of cells in which initial solid waste has been in place for a period of:
    - 5 years or more if active; or
    - 2 years or more if closed or at final grade;
  - Collects gas at a sufficient extraction rate;
  - Is operated with each wellhead under negative pressure except as provided in 40 CFR 60.753(b).
  - Is operated with each interior wellhead in the collection system having a landfill gas temperature less than 55°C and having either a nitrogen content less than 20 percent, as determined by EPA Method 3C; or an oxygen content less than 5 percent, as determined by EPA Method 3A. The permittee may establish a higher operating temperature, nitrogen, or oxygen value at a particular well. A higher operating value demonstration shall show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens.
  - Is designed to minimize off-site migration of subsurface gas;

- g. Routes the collected landfill gas to a treatment system that processes the collected gas for subsequent sale or use to energy recovery device(s). The treatment system must produce pipeline quality gas if the facility desires to meet the requirements of 40 CFR 60.752(b)(iii)(C) with a device other than energy recovery. All emissions from any atmospheric vent from the gas treatment system is subject to the requirements listed in 40 CFR 60.752 (b)(2)(iii) (A) and (B); **OR**
  - h. Controls landfill gas emissions by routing the collected landfill gas to a flare. The flare must meet the criteria in 40 CFR 60.18;
  - i. Maintains the methane concentration at the surface of the landfill at less than 500 ppmv above the background level.  
(9 VAC 5-50-410)
- # 5. **Open Flare Requirements** - The four (4) open flares shall meet the criteria in 40 CFR 60.18.  
(9 VAC 5-50-410)
- # 6. **Dust Emission Control** - Unless otherwise specified, dust emission controls shall include the following or equivalent as a minimum:
- a. Dust from grading, cell construction, waste compaction, application of daily cover, wood waste chipping operations, storage piles and traffic areas shall be controlled by wet suppression or equivalent (as approved by the DEQ) control measures.
  - b. All material being stockpiled shall be kept moist to control dust during storage and handling, or covered to minimize emissions.
  - c. Dust from haul roads shall be controlled by wet suppression and prompt removal of dried sediment resulting from soil erosion and dirt spilled or tracked onto paved surfaces within the landfill.
  - d. Reasonable precautions shall be taken to prevent deposition of dirt on public roads and subsequent dust emissions. Dirt spilled or tracked onto paved surfaces shall be promptly removed to prevent particulate matter from becoming airborne.  
(9 VAC 5-80-1180, 9 VAC 5-80-260 and 9 VAC 5-50-90)

#### **OPERATIONAL STANDARDS**

- # 7. **Operational Requirements** – The permittee shall demonstrate compliance with operational standards for the landfill gas collection and control system required by NSPS Subpart WWW (40 CFR 60.753) in accordance with appropriate subsection(s) of NSPS Subpart WWW (40 CFR 60.755). The permittee shall demonstrate compliance of the landfill gas collection and control system requirements of NSPS Subpart WWW (40 CFR 60.752) in accordance with appropriate subsection(s) of NSPS Subpart WWW (40 CFR 60.755). All reports required to demonstrate compliance with the compliance requirements of NSPS Subpart WWW (40 CFR 60.755) shall be prepared and submitted to the Piedmont Regional Office as required by NSPS Subpart WWW (40 CFR 60.755).  
(9 VAC 5-80-1180, 9 VAC 5-50-410)

- # 8. **Operation of Landfill** - Except where this permit is more restrictive than the applicable requirement, the MSW landfill shall be constructed and operated in accordance with 40 CFR 60, NSPS Subpart WWW.  
(9 VAC 5-50-410)
- # 9. **Operation of LFG Control System** - The gas control system shall be in operation at all times when the collected gas is routed to the system.  
(9 VAC 5-50-410)
- # 10. **Fuel** - The approved fuel for the open flares is landfill gas. The open flares may also use propane gas to ignite the pilot flame in the open flares. A change in fuel may require a permit to modify and operate.  
(9 VAC 5-80-1180, 9 VAC 5-50-50)
- # 11. **Fuel** – The landfill collection and control system, which consists of the four (4) open flares [(D002, D003, D004 and D005)] and shall consume no more than 4,572,700,000 ( $4.5727 \times 10^9$ ) cubic feet of landfill gas per year, calculated monthly as the sum of each consecutive 12 month period.  
(9 VAC 5-170-160, 9 VAC 5-80-1180)  
The limit on landfill gas consumption does not include the two odor control 50 SCFM open flares (they are not connected to the Gas Collection and Control System).
- # 12. **Hours of Operation** – The three open 2500 SCFM flares shall operate no more than 17,520 hours per year, calculated monthly as the sum of the previous 12 month period and no more than two shall be operated at one time.  
(9 VAC 5-80-1180)

### **EMISSION LIMITATIONS**

- # 13. **Visible Emission Limit** – The open flares shall be operated with no visible emissions, as determined by EPA Method 22, except for periods not to exceed a total of 5 minutes during two consecutive hours. This condition applies at all times except during startup, shutdown and malfunction.  
(9 VAC 5-50-20, 9 VAC 50-260, and 9 VAC 5-50-410)
- # 14. **Emission Factors** - The following emission factors (or others approved by the Piedmont Regional Office) shall be used to calculate emissions from five new open flares and the existing 3600 scfm open flare:

Particulate Matter/PM <sub>10</sub>	17.0	lbs/mmcf CH <sub>4</sub>
Sulfur Dioxide	8.9	lbs/mmcf LFG*
Nitrogen Oxides	40.0	lbs/mmcf CH <sub>4</sub> (2500/50 SCFM Flare)
Nitrogen Oxides	0.068	lbs/mmBtu (3600 SCFM Flare)
Carbon Monoxide	0.15	lbs/mmBtu
Non-Methane Organic Compounds	6.5	lbs/mmcf LFG*
Volatile Organic Compounds	2.5	lbs/mmcf LFG*

\*These emission factors are based on 60% methane in the LFG, which represents the maximum methane percentage the flare manufacturers will guarantee. Actual methane percentages may be less.

(9 VAC 5-50-260 and 9 VAC 5-80-1180)

These emission factors were included in the NSR permit dated August 9, 2005 (revised August 30, 2006) at the request of the facility based on individual manufacturer's guarantee. Compliance was determined using the procedures required by NSPS WWW for open flares.

- # 15. **Emission Limits** - Emissions from the operation of the 3600 SCFM open flare shall not exceed the limits specified below:

Particulate Matter/PM <sub>10</sub> / PM <sub>2.5</sub>	2.2 lbs/hr	9.7 tons/yr
Sulfur Dioxide	1.9 lbs/hr	8.5 tons/yr
Nitrogen Oxides	8.0 lbs/hr	35.2 tons/yr
Carbon Monoxide	17.8 lbs/hr	78.1 tons/yr
Volatile Organic Compounds	0.5 lbs/hr	2.4 tons/yr
Non-Methane Organic Compounds	1.4 lbs/hr	6.1 tons/yr

(9 VAC 5-50-260 and 9 VAC 5-80-1180)

- # 16. **Emission Limits** - Emissions from the operation of each of the three 2500 SCFM open flares shall not exceed the limits specified below:

Particulate Matter/PM <sub>10</sub> / PM <sub>2.5</sub>	1.5 lbs/hr	6.7 tons/yr
Sulfur Dioxide	1.3 lbs/hr	5.9 tons/yr
Nitrogen Oxides	3.6 lbs/hr	15.8 tons/yr
Carbon Monoxide	12.3 lbs/hr	53.9 tons/yr
Volatile Organic Compounds	0.4 lbs/hr	1.6 tons/yr
Non-Methane Organic Compounds	1.0 lbs/hr	4.3 tons/yr

(9 VAC 5-50-260 and 9 VAC 5-80-1180)

- # 17. **Emission Limits** - Emissions from the operation of each of the two 50 SCFM open flares shall not exceed the limits specified below:

Nitrogen Oxides	0.1 lbs/hr	0.3 tons/yr
Carbon Monoxide	0.2 lbs/hr	1.1 tons/yr

(9 VAC 5-50-260 and 9 VAC 5-80-1180)

- # 18. **Emission Limits** - Emissions from the six (6) open flares shall not exceed the limits specified below (after the shut down of the enclosed flare, vaporator and conversion of the engine to propane only):

Particulate Matter/PM <sub>10</sub> / PM <sub>2.5</sub>	23.3 tons/yr
Sulfur Dioxide	20.5 tons/yr
Nitrogen Oxides	67.3 tons/yr
Carbon Monoxide	188.0 tons/yr
Volatile Organic Compounds	5.7 tons/yr
Non-Methane Organic Compounds	14.9 tons/yr

(9 VAC 5-50-260 and 9 VAC 5-80-1180)

## MONITORING

The landfill NSPS, Subpart WWW, is the basis for most of the requirements at this facility. Since the NSPS was promulgated after 1990, no periodic monitoring is required for these conditions other than the monitoring required in the regulation. The monitoring requirements in Conditions 23 and 24 of the NSR permit have been modified in the Title 5 permit (Section III.D., Periodic and Other Monitoring) to meet Part 70 requirements as follows:

**Gas control system** - The operation of the gas control system shall be monitored as follows:

- Gas flow, recorded at least once every 15 minutes.
- For an open flare, the presence of the pilot flame or the flare flame shall be continuously monitored by a heat-sensing device and recorded.

(9 VAC 5-80-110 and Condition 23 of 08/30/2006 Permit)

**Corrective actions** - If monitoring demonstrates that certain requirements are not being met, corrective actions shall be taken as specified in 40 CFR 60.755 (a) (3) through (5) or 40 CFR 60.755 (c). If corrective actions are taken as specified in 40 CFR 60.755(c)(4), the monitored exceedance is not a violation of the operational requirements of this permit or 40 CFR 60, Subpart WWW.

(9 VAC 5-50-410, 9 VAC 5-80-110 and Condition 24 of 08/30/2006 Permit)

**Gauge pressure** - The permittee shall measure gauge pressure in the header at each individual active well monthly. If a positive pressure exists, corrective action shall be taken within 5 calendar days of the exceedance. If a negative pressure cannot be achieved without excess air infiltration within 15 calendar days of the first measurement, the system shall be expanded within 120 days of the initial measurement of positive pressure. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for



approval.

(9 VAC 5-50-410, 40 CFR 60.755(a)(3))

**Active well monitoring** - The permittee shall monitor each active well monthly for temperature and nitrogen or oxygen. If a well exceeds one of these operating parameters, action shall be initiated to correct the exceedance within 5 calendar days. If correction of the exceedance cannot be achieved within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial exceedance. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.

(9 VAC 5-50-410, 40 CFR 60.755(a)(5))

**Surface methane** - The permittee shall monitor surface concentrations of methane along the entire perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals as detailed in the updated Surface Monitoring Design Plan for each collection area for which waste has been in place for two or more years if closed or at final grade or for which waste has been in place for five or more years if active. This surface methane monitoring shall take place on a quarterly basis. Areas with steep slopes or other dangerous areas may be excluded from this monitoring after receiving approval from the Director, Piedmont Region. (note: the working face is *specifically* excluded from this monitoring due to the inherently dangerous environment)[see 40 CFR 60.753(d) – last sentence “Areas with steep slopes or other dangerous areas may be excluded from the surface testing.”]

- Any reading of 500 ppm or more above background at any location shall be recorded as a monitored exceedance and the actions specified below shall be taken. As long as the specified actions are taken, the exceedance is not a violation of the operational requirements.
- The location of the exceedance shall be marked and recorded.
- The permittee shall perform cover maintenance or make adjustments to the vacuum of the adjacent wells to increase the gas collection in the vicinity of the exceedance. The location shall be remonitored within 10 calendar days of detecting the exceedance.
- If the remonitoring of the location shows a second exceedance, the permittee shall take additional corrective action and shall monitor the location again within 10 days of the second exceedance.
- Any location that initially showed an exceedance but has a methane concentration less than 500 ppm above background at the 10 day remonitoring shall be remonitored 1 month from the initial exceedance. If the 1 month remonitoring shows a concentration less than 500 ppm above the background, no further monitoring of that location is required until the next quarterly monitoring. If the 1 month remonitoring shows an exceedance, the permittee shall repeat the previous requirements.
- For any location where the monitored methane concentration equals or exceeds 500 ppm above background 3 times within a quarterly period, a new well or other collection device shall be installed within 120 calendar days of the initial exceedance. An alternative remedy to the exceedance may be submitted for approval.

(9 VAC 5-50-410, 40 CFR 60.755(c)(4) and 40 CFR 60.755(c)(1))

**Cover integrity** - The permittee shall implement a program to monitor for cover integrity and

implement cover repairs as necessary on a monthly basis.  
(9 VAC 5-50-410, 40 CFR 60.755(c)(5))

**Landfill gas** - The permittee shall install a sampling port and a port for temperature measurements at each wellhead. The permittee shall measure the gauge pressure in the gas collection header on a monthly basis. The permittee shall monitor nitrogen or oxygen concentration in the landfill gas on a monthly basis. The permittee shall monitor temperature of the landfill gas on a monthly basis.  
(9 VAC 5-50-410, 40 CFR 60.756(a))

**Open flare monitoring** - The permittee shall install, calibrate, maintain, and operate according to manufacturer's specification the following equipment for the open flares:  
A heat sensing device at the flame to indicate the continuous presence of flame;  
A flow rate measuring device that shall record flow to the flare at least every 15 minutes, or with a bypass line valve secured in the closed position with a car-seal or lock-and-key type configuration. If the permittee elects to comply with this provision by securing the bypass line valve, then permittee shall perform a visual inspection of the seal or closure mechanism at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.  
(9 VAC 5-50-410, 40 CFR 60.756(c))

**Visible Emissions** - Visible Emission Evaluations (VEE) in accordance with 40 CFR Part 60, Appendix A, Method 22, shall be conducted by the permittee on the new 2500 SCFM and 50 SCFM open flares. Each observations period shall be two (2) hours. The details of the tests are to be arranged with Director, Piedmont Regional Office. The permittee shall submit a test protocol at least 30 days prior to testing. The evaluation shall be performed within 60 days after achieving the maximum production rate at which the facility will be operated or within 180 days after initial start up of the new 2500 SCFM and 50 SCFM open flares. Should conditions prevent concurrent opacity observations, the Director, Piedmont Regional Office shall be notified in writing, within seven days, and visible emissions testing shall be rescheduled within 30 days. Rescheduled testing shall be conducted under the same conditions (as possible) as the initial performance tests. Two copies of the test result shall be submitted to the Director, Piedmont Regional Office within 45 days after test completion and shall conform to the test report format enclosed with this permit.

(9 VAC 5-170-160, 9 VAC 5-50-30 and 9 VAC 5-80-1200 and 9 VAC 5-80-110E)

**Emission Limit Demonstration** -The NSR permit dated August 30, 2006, has limitations for the three new 2500 SCFM open flare and two new 50 SCFM open flares (for odor control) are both short term and long term emissions limitations. The periodic monitoring for these conditions may be satisfactorily implemented by recording the emissions factors, maximum rated capacity, and emission calculation formulas on site.

#### **RECORDKEEPING**

The permit includes requirements for maintaining records of all monitoring and testing required by the permit. These records include the following:

**General** - The permittee shall maintain records of all emission data and operating parameters necessary to demonstrate compliance with this permit. The content of and format of such

records shall be arranged with the Director, Piedmont Regional Office. These records shall include, but are not limited to:

- Current maximum design capacity, current amount of refuse in place, and year by year refuse accumulation rates.
- Description, location, amount, and placement date of all nondegradable refuse including asbestos and demolition refuse placed in landfill areas that are excluded from landfill gas estimation or landfill gas collection and control.
- Installation date and location of all newly installed wells.
- Map or plot showing each existing and planned well in the gas collection system with each well uniquely identified.
- Maximum expected gas flow rate.
- Parameters monitored for the gas collection and control systems.
- The yearly hours of operation of the open flares, calculated monthly as the sum of each consecutive 12-month period.

(9 VAC 5-80-110 and Condition 28 of 08/30/2006 Permit)

**Positive pressure** - The permittee shall record and have on hand for inspection purposes instances when positive pressure occurs in efforts to avoid a fire.

(9 VAC 5-50-410, 40 CFR 60.753(b)(1))

**Monitoring design plan** - The permittee shall develop and have on hand a surface monitoring design plan that includes a topographical map with the monitoring route and the rationale for any site-specific deviations from the 30 meter intervals.

(9 VAC 5-50-410, 40 CFR 60.753(d) and 40 CFR 60.752(b) (i) (D))

[ The Gas Collection and Control System Design Plan was last approved by Virginia DEQ on September 29, 2004 and contains the surface monitoring design plan.]

**Control equipment parameters** - The permittee shall keep up-to-date, readily accessible records for the life of the control equipment of the data listed below as measured during initial performance tests or compliance determinations. Records of subsequent tests or monitoring shall be maintained for a minimum of 5 years. Records of the control device vendor specifications shall be maintained until the equipment is removed.

- The landfill's maximum expected gas generation flow rate.
- The landfill's density of wells, horizontal collectors, and surface collectors.
- For the open flares, the flare type (i.e., steam-assisted, air assisted, or unassisted); all visible emission readings; heat content determinations; flow rate or bypass flow rate measurements; exit velocity determinations made during the initial performance test; continuous records of the flare flame monitoring; and records of all periods of operations during which the flare flame is absent.

(9 VAC 5-50-410, 40 CFR 60.758(b))

**Operating parameters** - The permittee shall keep for 5 years up-to-date, readily accessible continuous records of the following equipment operating parameters specified for monitoring:

- wellhead gauge pressures measured monthly
- wellhead temperatures measured monthly
- wellhead nitrogen or oxygen concentrations measured monthly
- flow rates to control equipment bypasses
- presence of flames in flares

- results of quarterly surface methane monitoring
  - periods of malfunctions of control or collection devices.
- (9 VAC 5-50-410, 40 CFR 60.758(c))

**Collectors** - The permittee shall keep for the life of the collection system an up-to-date, readily accessible plot map showing each existing and planned collector in the system. This map shall also provide a unique identification location label for each collector. Additionally, the permittee shall keep up-to-date, readily accessible records of the installation date and location of all newly installed collectors.

(9 VAC 5-50-410, 40 CFR 60.758(d))

**Exceedances** - The permittee shall keep for at least 5 years up-to-date, readily accessible records of all collection and control system exceedances of the operational standards, the reading in the subsequent month whether or not the second reading is an exceedance, and the location of each exceedance.

(9 VAC 5-50-410, 40 CFR 60.758(e))

**Malfunctions** - The permittee shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the landfill gas collection and control system; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative.

(9 VAC 5-50-410, 40 CFR 60.7(b))

**Storage Tanks, NSPS Subpart Kb** - The permittee shall keep readily accessible records showing the dimension of the following storage vessels:

- P08 - 250,000 gallon leachate storage tank
- P09 - 250,000 gallon leachate storage tank

and an analysis showing the capacity of each storage vessel. These records shall be kept by the permittee for the life of the storage vessel.

(9 VAC 5-50-410, 40 CFR 60.116b(a), and 40 CFR 60.116b(b))

#### **TESTING**

The permitted facility shall be constructed so as to allow for emissions testing at any time using appropriate methods. Upon request from the Department, test ports shall be provided at the appropriate locations.

(9 VAC 5-50-30, 9 VAC 5-80-110 and Condition 33 of 08/30/2006 Permit)

After the installation of a gas collection and control system in compliance with 40 CFR 60.755, the permittee shall determine the actual NMOC concentration and LFG flow rate and shall calculate the NMOC emission rate in accordance with 40 CFR 60.754 (b) for reporting the uncontrolled NMOC emission rate.

(9 VAC 5-50-410, 9 VAC 5-80-110 and Condition 19 of 08/30/2006 Permit)

The permittee shall provide safe sampling platforms, safe access to sampling platforms, and utilities for sampling and testing equipment.

(9 VAC 5-50-410, 40 CFR 60.8(e))

If measured, the nitrogen level at each wellhead shall be determined by using Method 3C.  
(9 VAC 5-50-410, 40 CFR 60.753(c)(1))

The oxygen level at each wellhead shall be determined by an oxygen meter using Method 3A except for the following:

- The span shall be set so that the regulatory limit is between 20 and 50 percent of the span.
- A data recorder is not required.
- Only a zero and a span calibration gas are required. Ambient air may be used as span.
- A calibration error check is not required.
- The allowable sample bias, zero drift, and calibration drift are 10%.

(9 VAC 5-50-410, 40 CFR 60.753(c)(2))

The background concentration of methane during surface emissions monitoring shall be determined for the instrument measuring the surface concentrations of methane by moving the probe inlet upwind and downwind outside the boundary of the landfill at a distance of at least 30 meters from the perimeter wells.

(9 VAC 5-50-410, 40 CFR 60.755(c)(2))

Surface emission monitoring shall be performed in accordance with 40 CFR 60 Appendix A, Method 21, Section 4.3.1 except that the probe inlet shall be placed within 5 to 10 centimeters of the ground. Monitoring shall be performed during typical meteorological conditions.

(9 VAC 5-50-410, 40 CFR 60.755(c)(3))

The portable analyzer used to determine the surface methane concentration shall meet the instrument specifications provided in 40 CFR 60, Appendix A, Method 21, Section 3, except that methane shall replace all references to VOC. The calibration gas shall be methane, diluted to a nominal concentration of 500 ppm in air. To meet the performance evaluation requirements in section 3.1.3 of Method 21, the instrument evaluation procedures of Section 4.4 of Method 21 shall be used. The calibration procedures in Section 4.2 of Method 21 shall be followed immediately before commencing a surface monitoring survey.

(9 VAC 5-50-410, 40 CFR 60.755(d))

## REPORTING

**Semi-Annual Compliance Report** – A semi-annual compliance report shall be submitted to the Director, Piedmont Region Office by the date specified below and shall contain the following:

- The initial performance test report for each new open flare shall contain the following information:
  - i. The type of flare.
  - ii. All visible emissions readings.
  - iii. Heat content determination.
  - iv. Gas flow rate or bypass measurement.
  - v. Exit velocity determination
- Value and length of time for exceedance of applicable parameters monitored under sections 40 CFR 60.756 (a), (b), (c), and (d);
- Description and duration of all periods when the control device was not working for a

- period exceeding 1 hour and length of time control device was not operating;
- All periods when the collection system was not operating in excess of 5 days;
- The location of each exceedance of the 500 parts per million surface methane concentration, and the concentration recorded at each location for which an exceedance was recorded as provided in 40 CFR 60.755 (c);
- The date of installation and the location of each well or collection system expansion added pursuant to paragraphs (a) (3), (b), and (c) (4) of 60.755.

Items (b) through (f) shall be submitted every six months. Semi-annual report shall cover the calendar year (January through June and July through December). One copy of the reports shall be submitted to U.S. Environmental Protection Agency at the address specified in condition IX.D. The annual reports and semi-annual reports, to include NESHAP Subpart AAAAA reports (Subsection 63.1930), shall be submitted by March 1 and September 1 of the calendar year.

(9 VAC 5-50-410, 40 CFR 60.757(f), 40 CFR 60.753(b)(1), 9 VAC 5-50-50, 9 VAC 5-80-110 and Condition 29 of 08/30/2006 permit)

**Closure report** - The permittee shall submit a closure report to the Director, Piedmont Regional Office within 30 days of the date the MSW landfill stopped accepting waste.  
(9 VAC 5-50-50, 9 VAC 5-80-110 and Condition 30 of 08/30/2006 permit)

**Equipment removal report** - The permittee shall submit an equipment removal report to the Director, Piedmont Regional Office 30 days prior to the removal or cessation of operation of the control equipment.

(9 VAC 5-50-50, 9 VAC 5-80-110, 40 CFR 60.757(e) and Condition 31 of 08/30/2006 permit)

**Annual emission fees** - The actual emissions covered by the permit program fees for the preceding year shall be calculated by the owner and submitted to the department by April 15 of each year. The calculations and final amount of emissions are subject to verification and final determination by the department.

(9 VAC 5-50-50, 9 VAC 5-80-110 and Condition 32 of 08/30/2006 permit)

## **STREAMLINED REQUIREMENTS**

The following conditions have been streamlined from the August 30, 2006 permit to construct and operate:

**#25** – General NSPS WWW Monitoring requirements already covered in the Title V permit.

**#26** – General NSPS WWW Monitoring requirements already covered in the Title V permit.

**#27** - General NSPS WWW/NESHAP AAAAA requirements already covered in the Title V permit.

## **GENERAL CONDITIONS**

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110 that apply to all Federal-operating permitted sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions.

## STATE ONLY APPLICABLE REQUIREMENTS

The State Only applicable requirements in this Title V permit Are:

1. Emissions Limits - **Emissions from the operation of the 50 SCFM open flare (D006 and D007) shall not exceed the limits specified below:**

Nitrogen Oxides	0.1 lbs/hr	0.3tons/yr
Carbon Monoxide	0.2 lbs/hr	1.1tons/yr

(9 VAC 5-50-260 and Condition 19 of 08/30/2006 Permit)

The emissions limits for these two small odor control flares are state only enforceable, but are included in the facility wide limits to avoid PSD applicability.

## FUTURE APPLICABLE REQUIREMENTS

Future applicable requirements for this facility include the requirements for landfill closure found in NSPS Subpart WWW, Standards of Performance for Municipal Solid Waste Landfills as follows:

### Requirements for Landfill Closure - NSPS Subpart WWW

The collection and control system may be capped or removed provided that all the following conditions are met:

- The landfill shall be a closed landfill. A closed landfill is defined as a landfill in which solid waste is no longer being placed and in which no additional solid wastes will be placed without first filing a notification of modification as prescribed in the General Provisions of 40 CFR 60. A closure report shall be submitted to DEQ.
- The collection and control system shall have been operating at least 15 years.
- The calculated NMOC gas production shall be less than 50 megagrams per year on three successive test dates. The test dates shall be no less than 90 days apart and no more than 180 days apart.

(9 VAC 5-50-410, 40 CFR 60.752(b)(2)(v))

The permittee shall calculate the NMOC emission rate for purposes of determining when the system can be removed using the following equation:

$$M_{nmoc} = 1.89 \times 10^{-3} Q_{lfg} \times C_{nmoc} \quad \text{where:}$$

$M_{nmoc}$  = mass emission rate of NMOC, Mg/year

$Q_{lfg}$  = flow rate of landfill gas, cubic meters/minute

$C_{nmoc}$  = NMOC concentration, ppmv as hexane

$Q_{lfg}$  shall be determined by measuring the total landfill gas flow rate at the common

header pipe to the control device using a gas flow measuring device calibrated according to the provisions of 40 CFR 60, Appendix A, Method 2E, Section 4. C<sub>nmoc</sub> shall be determined by collecting and analyzing landfill gas sampled from the common header pipe using Method 25C or Method 18. The minimum list of compounds shall be those published in the most recent version of AP-42 for Method 18. The sample location on the common header pipe shall be before any condensate removal or refining units. The permittee shall divide the NMOC concentration from Method 25C by six to convert from C<sub>nmoc</sub> as carbon to C<sub>nmoc</sub> as hexane.

The owner or operator may use other test methods if approved by the Administrator.

(9 VAC 5-50-410, 40 CFR 60.754(b))

The permittee shall submit a closure report to DEQ within 30 days of waste acceptance cessation. DEQ may request additional information as may be necessary to verify that permanent closure has taken place in accordance with the requirements of 9 VAC 20-80-250 E. and F. If a closure report has been submitted to the DEQ, no additional wastes may be placed into the landfill without filing a notification of modification.

(9 VAC 5-50-410, 40 CFR 60.757(d))

The permittee shall submit an equipment removal report to the DEQ 30 days prior to removal or cessation of operation of the control equipment. The report shall contain the following:

- A copy of the closure report.
- A copy of the initial performance test report demonstrating that the 15 year minimum control period has expired.
- Dated copies of 3 successive NMOC emission rate reports demonstrating the landfill is no longer producing 50 Mg or greater of NMOC per year. DEQ may request additional information to verify that all conditions for removal have been met.

(9 VAC 5-50-410, 40 CFR 60.757(e))

*On May 23, 2002, EPA proposed significant revisions (67 FR 36476) in order to clarify: 1) responsibility for compliance activities on-site; 2) definition of treated landfill gas; 3) initial test performance test requirements; and 4) compliance activities conducted by third parties with control systems off-site. A copy of 67 FR 36476 is attached to the Title V permit and this SOB for reference.*

## INAPPLICABLE REQUIREMENTS

Compliance with the provisions of this permit shall be deemed compliance with all applicable requirements in effect as of the permit issuance date as identified in this permit. This permit shield covers only those applicable requirements covered by terms and conditions in this permit and the following requirements which have been specifically identified as being not applicable to this permitted facility:

Citation	Title of Citation	Description of Applicability
9 VAC 5-40-5800 (40 CFR 60 Subpart Cc)	Emission Standards for Sanitary Landfills (Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills)	Article only applies to municipal solid waste landfills which commenced construction, reconstruction or modification before May 30 1991.
40 CFR 60 Subpart Kb	Standards of Performance for Volatile Organic Liquid Storage	Storage vessels with a capacity greater than or equal to 40 cubic



	Vessels (including Petroleum Liquid Storage Vessels) for which Construction, Reconstruction or Modification Commenced after July 23, 1984.	meters (10,567 gallons) constructed, reconstructed or modified after July 23, 1984, Insignificant emission units numbered P01, P02, P03, P04, P05, P06, P07, P10, P11 and P12 have capacities of less than 10,567 gallons and therefore this standard is not applicable.
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### COMPLIANCE PLAN

This facility is not subject to a Compliance Plan at this time.

### INSIGNIFICANT EMISSION UNITS

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Insignificant emission units include the following:

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
P01	Used oil tank	5-80-720 B	VOC	1,000 gal.
P02	#2 fuel oil tank	5-80-720 B	VOC	10,000 gal.
P03	#2 fuel oil tank	5-80-720 B	VOC	8,000 gal.
P04	Lube oil tank	5-80-720 B	VOC	500 gal.
P05	Lube oil tank	5-80-720 B	VOC	250 gal.
P06	Lube oil tank	5-80-720 B	VOC	250 gal.
P07	Propane tank	5-80-720 B	VOC	1,000 gal.
P10	Leachate tank	5-80-720 B	VOC	8,000 gal.
P12	Propane tank	5-80-720B	VOC	1,000 gal.
P11	Lube oil tank	5-80-720 B	VOC	250 gal.

<sup>1</sup>The citation criteria for insignificant activities are as follows:

9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application

9 VAC 5-80-720 B - Insignificant due to emission levels

9 VAC 5-80-720 C - Insignificant due to size or production rate

### CONFIDENTIAL INFORMATION

There is no Confidential Information associated with this permit action.

### PUBLIC PARTICIPATION

The draft/proposed permit was placed on public notice in the Richmond Times Dispatch from December 21, 2005 to January 20, 2006. This permit is being processed for concurrent review of draft and proposed permits by EPA.

No comments were received during the Public Comment period and US EPA comments were resolved during the concurrent comment period by adding to the future applicable requirements:

On May 23, 2002, EPA proposed significant revisions (67 FR 36476) in order to clarify: 1) responsibility for compliance activities on-site; 2) definition of treated landfill gas; 3) initial test performance test requirements; and 4) compliance activities conducted by third parties with control systems off-site. A copy of 67 FR 36476 is attached to the Title V permit and this SOB for reference. See attached comments by US EPA and Email resolving the issue.